

Childhood Psychosis or Mental Retardation: A Diagnostic Dilemma

I. Psychiatric and Psychological Aspects

BENJAMIN GOLDBERG, B.Sc., M.D., C.M.* and
H. H. SOPER, B.A., M.A.,† *London, Ont.*

SUPERSTITION and the mass media continue to associate retarded individuals with bizarre and eccentric behaviour. Yet there are only a few references in the scientific literature concerning the occurrence of psychosis in persons with mental retardation.^{1,2} Bleuler regarded such occurrences as so unique that he coined the term "Pfpropschizophrenia" for the condition.

Childhood psychosis itself, with or without retardation, holds great fascination and frustration for the psychiatrist because of the multiplicity of theories and classifications; the serious prognosis for social integration of these children; and lack of definitive treatment.

A relatively high percentage of retarded children demonstrated psychotic symptoms in a previous study by one of the authors.³ It was therefore felt that it would be of value to examine this group of children more closely in order to clarify the diagnosis of psychosis in children, to assist in earlier recognition, to establish some relation between mental retardation and childhood psychosis, and, hopefully, to stimulate more concern about this condition in all those interested in child health.

CLASSIFICATION

Bradley⁴ described four chronological periods in the history of the development of scientific concepts of childhood psychosis. Some of the important milestones in this respect are listed in Table I.

TABLE I.

1812	Benjamin Rush	insanity in children
1896	E. Kraepelin	dementia praecox
1905	Sante De Sanctis	dementia precocissima
1907	E. Bleuler	schizophrenia
1908	Theodore Heller	dementia infantilis
1933	Howard Potter	childhood schizophrenia
1937	C. Bradley	review of literature
1942	Lauretta Bender	nuclear schizophrenia
1943	Leo Kanner	early infantile autism
1949	Margaret Mahler	schizophrenia
1951	Rank and Kaplan	pseudo-schizophrenia
1954	D. Fuller	schizophrenia and brain injury
1954	R. Ekstein	borderline psychosis

Prior to 1900 there were no direct references to psychosis in children. Those who did write about prepubertal psychosis felt that the condition was no different from adult psychosis. From 1900 to 1925 those who wrote about this subject, influenced

ABSTRACT

A relatively large percentage of children seen at a mental retardation clinic demonstrated psychotic symptoms. The entire group with psychotic manifestations, 62 in all, were reviewed in order to clarify the diagnosis of childhood psychosis or mental retardation. The 1961 British criteria for childhood psychosis were used and are advocated by the authors. Childhood psychosis was the primary diagnosis in 38 cases, and psychosis secondary to brain damage in 24 cases. Onset of the condition under the age of three years and a poor prognosis for social recovery were characteristic of the entire group.

Obvious emotional disorder was present in 21 mothers and 14 fathers. There was a continuum in terms of number of psychotic symptoms, level of intelligence and presence of organic signs. It is concluded that there is an overlap between the entities of childhood psychosis and mental retardation.

by Kraepelin and Bleuler, still described psychoses in the child as similar to those of the adult. From 1925 until 1940 some authors began to insist that psychosis in children was different. Over the last two decades there has been a considerable increase in the number of studies in this field. Various authors have separated symptom clusters to form different subgroups of childhood psychoses, e.g. the nuclear schizophrenia of Bender,^{5,7} the early infantile autism of Kanner,⁸ and the symbiotic psychosis of Mahler.

Corresponding to the various descriptions in the literature many theories of causation have been proposed. These are summarized in abbreviated form in Table II. Recently, multiple causation theories are being proposed and appear to be gaining in acceptance.

TABLE II.—CHILDHOOD SCHIZOPHRENIA
THEORIES OF CAUSATION (FROM BELLAK 1958)

1883	Clevenger	larval epilepsy
1943	Kanner	parental emotional frigidity
1949	Bellak	final common pathway
1952	Marcus	brain disturbance
1952	Sackler	endocrine dysfunction
1953	Ackerman	biological continuum
1954	Kanner	multiple causes
1955	Rank	mother-child relationship
1956	Bender	dysmaturation
1956	Kallmann	heredity
1956	Szurek	motivational conflict

Presented at the Second Annual Symposium on Mental Retardation, sponsored by the Children's Psychiatric Research Institute and the University of Western Ontario, London, Ont., April 17, 1963.

*Staff Psychiatrist, The Children's Psychiatric Research Institute, London, Ont.

†Clinical Psychologist, The Children's Psychiatric Research Institute, London, Ont.

For the purpose of this study various definitions have been used.

*Mental retardation*⁹ refers to subaverage general intellectual functioning that originates during the developmental period and is associated with impairment in maturation, learning, or social adjustment.

We have chosen to adopt the definition of *childhood psychosis* as enunciated by a 1961 British working party¹⁰ and listed in Table III. We have avoided the term "childhood schizophrenia", since it implies a relationship to adult schizophrenia. The term "psychosis" is a more general one describing a personality which fails to evaluate external reality correctly and deals ineffectively with people or objects.

TABLE III.—SCHIZOPHRENIC SYNDROME OF CHILDHOOD

1. Gross and sustained impairment of emotional relationships with people
2. Apparent unawareness of his own personal identity to a degree inappropriate to his age
3. Pathological preoccupation with particular objects or certain characteristics of them, without regard to their accepted functions
4. Sustained resistance to change in the environment and a striving to maintain or restore sameness
5. Abnormal perceptual experience (in the absence of discernible organic abnormality)
6. Acute, excessive and seemingly illogical anxiety as a frequent phenomenon
7. Speech either lost, or never acquired, or showing failure to develop beyond a level appropriate to an earlier age
8. Distortion in motility patterns
9. A background of serious retardation in which islets of normal, near normal, or exceptional intellectual function or skill may appear

METHOD OF STUDY

A description of the diagnostic, clinical and research function of the Children's Psychiatric Research Institute, London, Ont., was presented in a previous communication in this Journal.¹²

The files of 1216 suspected retarded children seen at this clinic were reviewed. Of this total group of patients 62 were described as psychotic, an incidence of 5.1%. The diagnosis was made by nine physicians working in two teams. Childhood psychosis was considered the primary diagnosis in 38 cases. Psychosis secondary to brain damage was considered in 24 cases. Forty-four of these patients were managed by a psychiatrist and 18 by a pediatrician. All patients were then evaluated according to the history of the course of the illness, family studies, presenting symptoms and psychological appraisal.

TABLE IV.—AGE AT ONSET OF ILLNESS

Age	Number	Per cent
0 - 1.....	11	18
1 - 2.....	11	18
2 - 3.....	12	19
3 - 7.....	8	13
7 - 12.....	2	3
12 - 16.....	3	5
Unknown.....	15	24

TABLE V.—SYMPTOMATOLOGY (FROM CASE HISTORIES)

	No. of patients
1. <i>Impaired relations with people</i>	
Withdrawn.....	25
Crying and screaming.....	24
Fearful.....	15
Violent.....	12
Inappropriate laughing.....	9
Wishing to be held.....	2
2. <i>Unawareness of identity</i>	
Self-aggression.....	15
Touching, smelling, licking, biting.....	11
Absorbed with body.....	2
3. <i>Preoccupation with objects</i>	
Attached to objects.....	20
Destructive.....	10
Collects.....	1
4. <i>Resistance to change</i>	
Compulsive activities.....	36
Fearful.....	15
5. <i>Abnormal perception</i>	
Fantasy world.....	8
Delusions.....	5
Role playing.....	4
Hallucinations.....	2
6. <i>Unusual anxiety</i>	
Crying and screaming.....	11
Soiling.....	9
7. <i>Speech inappropriate</i>	
Echolalia.....	18
Mute.....	13
Perseveration.....	9
Shouting.....	5
Fragmented.....	3
8. <i>Disturbance of motility</i>	
Hyperactive and restless.....	27
Rocking.....	11
Hand mannerisms.....	8
Autoerotism and homosexual.....	8
Whirling.....	4
Rolling.....	4
Posturing.....	2
Dancing.....	2
Toe walking.....	1
9. <i>Islands of intact intellect</i>	
Musical talent.....	8
Memory excellent.....	3
Games ability.....	1

HISTORY OF ILLNESS

Over half the children developed symptoms before the age of three years (Table IV).

The symptoms that the parents described are listed in Table V.

In 20 families the symptoms appeared during a period of psychological stress: with five children it was the birth of a sibling; with four, a period of hospitalization; with two, the illness of the mother; with two, the illness of the father; and with the remainder, symptoms began coincident with menarche, separation of the parents, beginning of school, change of foster homes, or changing baby sitters.

During the period of observation at the clinic, which ranged from a month to three years, only two children showed social recovery. Six were moderately improved, 12 slightly improved; the

rest were unchanged, worse, or not available for follow-up.

The procedures used in the treatment of patients with childhood psychosis are summarized in Table VI.

TABLE VI.—TREATMENT

<i>Somatic therapy</i>
1. Electroshock ²³
2. Tranquillizers, antihistamines ²⁴
3. Lobotomy ²⁵
<i>Psychosocial therapy</i> ²⁶
1. Parental substitutes including residential care
2. Communication regarding identity
3. Enhance intact ego functions
4. Encourage adherence to reality
5. Counselling, case work, and individual therapy of parents

Of these procedures, electroshock and prefrontal lobotomy were not attempted with this group.

FAMILY STUDIES

There were nine university-educated mothers and six university-educated fathers in this group. Sixteen of the fathers were in professional and managerial occupations. Twenty-one mothers had overt psychopathology: five were described as schizoid personalities, two were antisocial personalities, and 14 showed mixed neurotic reactions, including anxiety and depressive features. Fourteen fathers were emotionally disturbed: two were described as having schizophrenic reactions, four had neurotic reactions, and eight were antisocial personalities with alcoholism and criminality as predominant symptoms.

An attempt was made at the time of interview to classify the emotional warmth of the parent in relationship to the child (Table VII).

TABLE VII.

	<i>Mother</i>		<i>Father</i>	
	<i>Number</i>	<i>Per cent</i>	<i>Number</i>	<i>Per cent</i>
Cold.....	6	10	3	5
Passive non-entity	6	10	11	17
Stimulating.....	6	10	7	11
Warm.....	18	29	26	42
Overprotective....	3	5	1	2
Not known.....	23	37	14	22

Six siblings of the patients displayed psychopathology. Two were schizoid personalities; two displayed neurotic disturbances, and two, conduct disturbances.

PSYCHOLOGICAL APPRAISAL

Two psychologists examined and observed the patients. In each case an attempt was made to administer formal intelligence testing, either the Stanford-Binet Form L-M or the Wechsler Intelligence Scale for Children. The Goodenough Draw-a-person test was administered when possible.

The functioning of these children during psychological testing is summarized, utilizing the criteria

of childhood psychosis described earlier in this report (Table VIII).

TABLE VIII.—PRESENCE OF ACCEPTED SYMPTOMATOLOGY (BY EXAMINATION)

<i>Criteria</i>	<i>Number of children</i>	<i>Per cent</i>
1. Impaired relations with people....	52	84
2. Unawareness of identity.....	19	31
3. Preoccupation with objects.....	32	52
4. Resistance to change.....	28	45
5. Abnormal perception.....	9	14
6. Unusual anxiety.....	24	39
7. Speech not appropriate to age.....	36	58
8. Distortion of motility patterns....	32	52
9. Islands of intact intellect.....	13	21

1. Relationship to Examiner and Test Situation

Sixteen of the 62 children were noted to be hyperactive. Six were underactive. Twenty-one withdrew from bodily contact or would push the examiner away. Nine children exhibited marked clinging behaviour towards the parents before entering the room. Twenty-eight children appeared withdrawn. Twenty-two, however, exhibited normal spontaneous behaviour.

2. Verbal Functioning

Thirty-eight children demonstrated poor or inadequate verbal comprehension. Twenty-seven children did not show adequate verbal expressive ability. Ten were mute, making no attempt at using language. Five employed pantomime as a substitute for verbal communication. Twelve demonstrated echolalia, and 16 had perseverative speech.

3. Non-verbal Functioning

Eighteen children were testable using the Block Design and Object Assembly subtests of the WISC. Their performance was judged according to the Goldstein-Scheerer¹³ criteria for organic brain impairment (e.g. rotations, simultaneous turning blocks, loss of abstract approach). Twelve children were judged on the basis of their performance in these tests to have organic brain impairment; the neurologist in our team (G. G. Hinton, M.D.) independently judged that all were organic. In the case of the remaining six not demonstrating organic signs, the neurologist's opinion agreed with the interpretation of the test in four and disagreed in two.

4. Personal Identity

Twenty-one children were able to produce figure drawings. The results are interpreted as reflecting their self-concept and maturity.

(a) The most frequently omitted body parts were hair, fingers and nose. These omissions appear to have no relationship to intelligence level.

(b) Goodenough scores were compared to the number of presenting symptoms and here again there appeared to be no significant relationship.

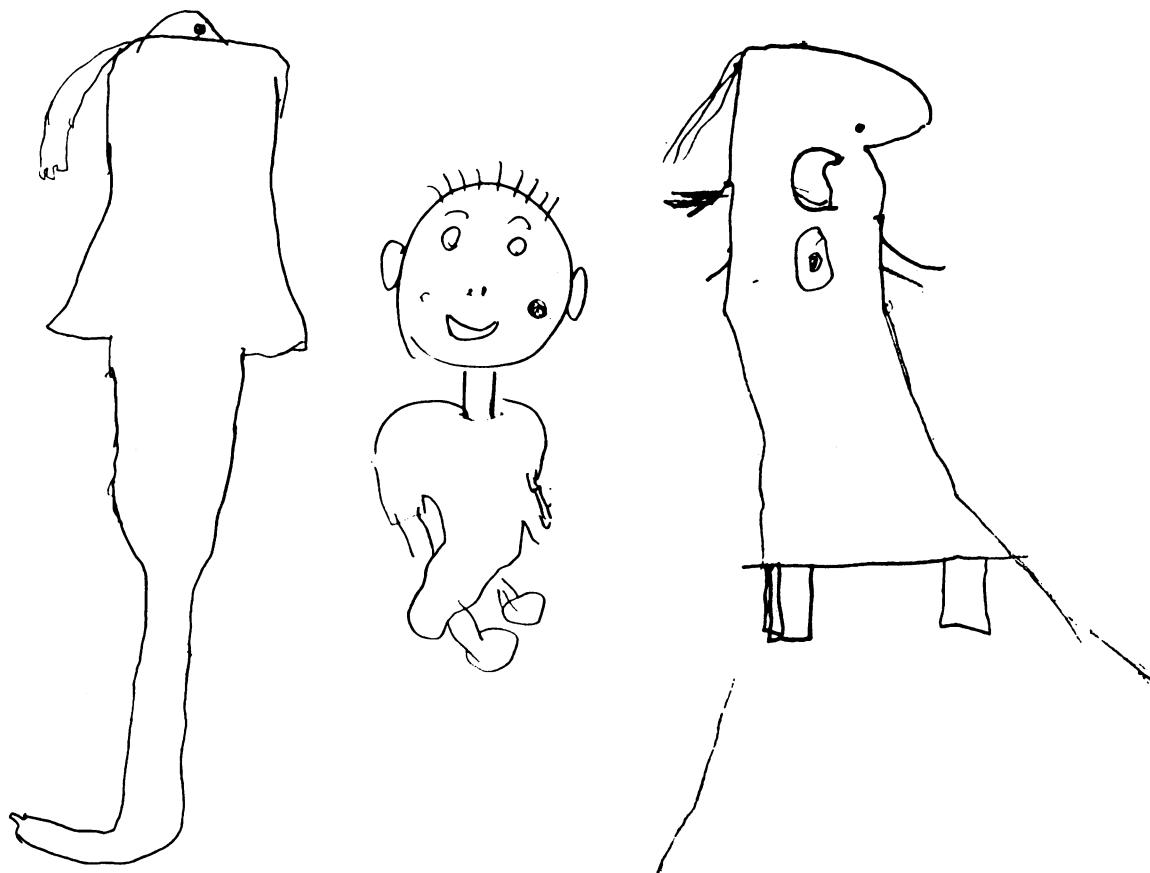


Fig. 1.—Qualitative characteristics of drawings; lack of proportions of certain body parts, head, legs, ears, etc.

(d) Qualitative characteristics of the drawings showed:

(i) Lack of proportion of body parts, frequently due to exaggeration of particular parts, viz. head, legs, ears, etc., with the overall result of creating a bizarre figure (Fig. 1).

(ii) A noticeable degree of expression in facial features such as anger, hostility, sadness.

5. General Intellectual Functioning

The ages of the children when seen at the clinic are given in Table IX. Only 31 children were testable. The distribution of I.Q. is shown in Fig. 2. The mean I.Q. was 53. The distribution shows a bimodal characteristic.

TABLE IX.—AGE OF PATIENT WHEN FIRST SEEN

Age	Number of children	Per cent
2 - 5.....	10	16
5 - 10.....	23	37
10 - 16.....	22	36
16 - 24.....	7	11

DISCUSSION

Previously reported surveys of normal and problem children^{14, 15} have indicated an incidence of between 1 and 2% of childhood psychosis. A survey¹⁶ of the Child Guidance Clinic of London,

Ont., revealed that 2.6% of 460 cases were classified as psychotic. The incidence of 5.1% in our out-

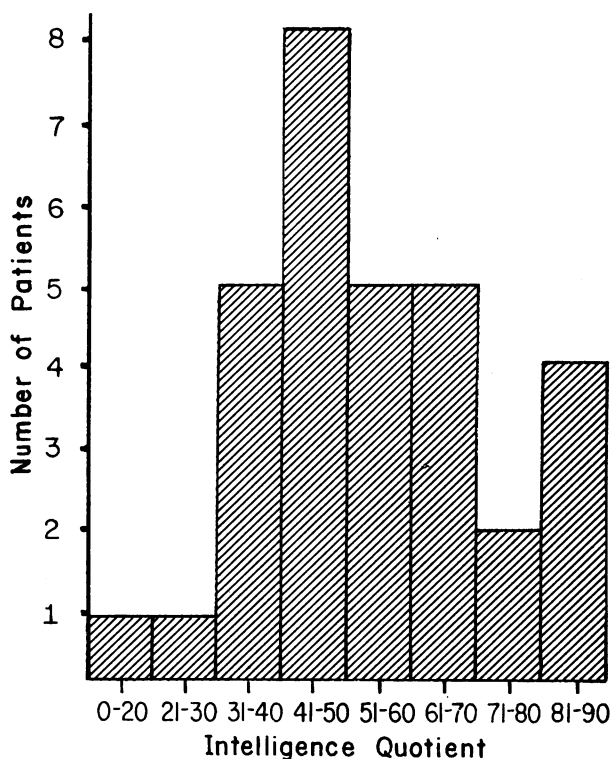


Fig. 2.—Intellectual classification: number testable, 31.

patient clinic is thus somewhat higher than usually reported. It is, however, of the same order as that reported in Green's¹⁷ study of institutionalized defectives in which he found 5.8% of 7924 patients to be psychotic.

This apparent increase in a retarded population may be understood in terms of Bender's¹⁸ theory of dysmaturation which proposes that the earlier the onset of childhood psychosis the more likely that the child will appear to be mentally defective. It may also be interpreted from Fuller's¹⁹ theory that brain damage in a defective child can so alter perception that psychosis occurs. The former implies that the psychosis produces the mental retardation, while the latter indicates a grafting on of the psychosis to an already damaged child; both or neither may be correct.

The children in the group that were studied did not demonstrate all nine of the British criteria. Some had as few as two of these, and others had as many as seven. Despite this we would still favour the uniform use of the British criteria to encourage comparable studies.

Previous surveys^{20, 21} have indicated that between 17 and 50% of childhood psychotics improve considerably to the point of social, if not psychological, recovery. Our lower incidence of improvement may indicate the gloomier prognosis of a child who is defective as well as psychotic. At the same time, a shorter observation period and less intensive treatment procedures may contribute to our lower figures.

Kanner and Rank have emphasized the increased number of intellectual, emotionally frigid parents found in families of psychotic children. No consistent finding of these qualities was found throughout the whole group, although highly educated, cold, emotionally disturbed parents were present. We have not been able to answer in this review why one child succumbs to the influence of a psychotoxic family and another develops psychosis without external influences. Perhaps both exogenous and endogenous factors produce a final common pathway.

The bimodal distribution of the intelligence scores and the presence of organic signs in some children and not in others suggest that at least two groups of psychotic children were being studied, confirming the conclusions of investigators such as Goldfarb.²²

It had been assumed that psychotic children would have a poor self-concept. This was not confirmed by using the Goodenough Draw-a-Person test and comparing the results with their general intelligence. This may mean that in the testable group this symptom was not present, that the test does not reflect self-concept, or that this symptom is not particularly significant in childhood psychosis.

Despite all these findings we are far from answers to such questions as whether brain damage precedes all defective psychotic children, whether there is a specific type of brain damage which

disposes to psychosis rather than to another type of behavioural problem, and whether the present psychological tests for organic brain damage are valid.

SUMMARY

A group of 62 psychotic children seen at a mental retardation clinic are described. The relation of psychosis to retardation is discussed, and a brief history of classification of childhood psychosis is presented. Attention is drawn to the 1961 British criteria of childhood psychosis. The high incidence of psychotic symptoms in retarded children is demonstrated. The poorer prognosis in these children is noted. Twenty-one mothers and 14 fathers had overt psychopathology. Twelve of 18 testable children showed signs of organic brain impairment.

It is suggested that there is an overlap between childhood psychosis and mental retardation. Possible avenues have been opened for exploration in the future.

REFERENCES

1. O'GORMAN, G.: *J. Ment. Sci.*, **100**: 934, 1954.
2. BERGMAN, M., WALLER, H. AND MARCHAND, J.: *Psychiat. Quart.*, **25**: 294, 1951.
3. GOLDBERG, B. AND MAX, P.: *Canad. Med. Ass. J.*, **87**: 507, 1962.
4. BRADLEY, C.: In discussion: *Res. Publ. Ass. Res. Nerv. Ment. Dis.*, **34**: 466, 1954.
5. BENDER, L.: *Nerv. Child.*, **1**: 138, 1942.
6. BELLAK, L.: *Dementia praecox*, Grune & Stratton, Inc., New York, 1948.
7. *Idem*: *Schizophrenia*, Logos Press, New York, 1958.
8. KANNER, L.: *Nerv. Child.*, **2**: 217, 1943.
9. HEBER, R.: *Amer. J. Ment. Defic.*, **64**: (Suppl.), 1, 1959.
10. CAMERON, K. et al.: *Brit. Med. J.*, **2**: 889, 1961.
11. American Psychiatric Association, Committee on Nomenclature and Statistics: *Diagnostic and statistical manual; mental disorders*, Washington, 1952.
12. ZARFAS, D. E.: *Canad. Med. Ass. J.*, **88**: 192, 1963.
13. GOLDSTEIN, K. AND SCHEERER, M.: *Psychological Monographs*, **53**: 151, 1941.
14. BRADLEY, C.: *Schizophrenia in childhood*, The Macmillan Company, New York, 1941.
15. LURIE, L. A., TRETZ, E. B. AND HERTZMAN, J.: *Amer. J. Psychiat.*, **92**: 1169, 1936.
16. MCLEISH, J.: Personal communication, April 1963.
17. GREEN, R. A.: *Proceedings, American Association on Mental Deficiency*, **38**: 126, 1933.
18. BENDER, L.: *Amer. J. Orthopsychiat.*, **17**: 40, 1947.
19. FULLER, D. S.: *Bull. Menninger Clin.*, **18**: 52, 1954.
20. CREAK, E. M.: *Brit. J. Psychiat.*, **109**: 84, 1963.
21. BENDER, L.: *Res. Publ. Ass. Res. Nerv. Ment. Dis.*, **34**: 462, 1954.
22. GOLDFARB, W.: *Childhood schizophrenia*, Harvard University Press, Cambridge, Mass., 1961.
23. SILVER, A. A.: *Amer. J. Psychother.*, **9**: 196, 1955.
24. FISH, B.: *Compr. Psychiat.*, **1**: 55, 1960.
25. FREEMAN, W. AND WATTS, J. W.: *Dig. Neurol. Psychiat.*, **15**: 202, 1947.
26. EKSTEIN, R., BRYANT, K. AND FRIEDMAN, S. W.: *Childhood schizophrenia and allied conditions*. In: *Schizophrenia*, by L. Bellak, Logos Press, New York, 1958, p. 555.

PAGES OUT OF THE PAST: FROM THE JOURNAL OF FIFTY YEARS AGO

While discussing this feature of the ultimate division of all diseases under the cause, another great class of diseases comes into view. I refer to the insanities, a group that should not be separated either in text-books or in teaching from the nervous diseases. Why should alcoholism be placed under mental disorders for psychical symptoms and under nervous disorders for neuritis; and consider also similar absurd cases, namely, where toxic conditions affect the brain and spinal cord; cerebral diplegia with mental or nervous symptoms; epilepsy and epileptic insanity, and so on; perhaps I might even suggest general paralysis and tabes. There can be no separation between psychical and nervous disorders except on the basis of disturbances of specialized functions.—Goldwin W. Howland: *Canad. Med. Ass. J.*, **3**: 847, 1913.